

## ABSTRACT

A squaring cell combines first and second exponential currents to approximate square law behavior. The exponential currents can be generated by current stacks having pairs of series-connected junctions. The exponential currents can be altered to change the shape of the exponential currents to better approximation true square law behavior. A multiplier combines four exponential currents to approximate a multiplication function. The exponential currents in the multiplier can be generated by current stacks that are cross-connected so as to generate two output currents, the difference of which represents the multiplication of two input signals.